REMARKS/ARGUMENTS

By this amendment, Claims 20-29, 42, 43, 46-49, 61, 64, and 67 are amended, and no claims are added or cancelled. Hence, Claims 1-8, 11-16, 20-29, 31-40, 42, 43, 46-51, and 54-68 are pending in the application.

I. SUMMARY OF THE REJECTIONS

A. 35 U.S.C. § 101

Claims 20-29, 42, 43, 46-49, 61, 64, and 67 stand rejected under 35 U.S.C. § 101 because the claimed invention is allegedly directed to non-statutory subject matter. Claims 20-29, 42, 43, 46-49, 61, 64, and 67 are now directed to a computer-readable **storage** medium. Examples of computer-readable **storage** media include elements 506, 508, and 510 of FIG. 5 of applicant's specification. The plain meaning of a "computer-readable **storage** medium **storing**...instructions" requires that the storage medium ***store*** the instructions so that they may be read by a computer. A carrier wave is not a computer-readable storage medium because a carrier wave is not a medium that is capable of storing instructions that may be read by a computer. While it is true that a carrier wave may *carry* instructions, those instructions carried by a carrier wave are not *stored*. For example, volatile or non-volatile memories may store instructions, whereas a carrier wave cannot. The Applicant acknowledges that the Office's current position is that carrier waves are not patentable subject matter, but a computer-readable storage medium is not a carrier wave.

The Office has previously acknowledged that claims directed to a computer-readable storage medium are patentable (see *In re Beauregard*). Even after the adoption of the current Interim Guidelines, the USPTO continues to issue many patents with claims directed towards a computer-readable storage medium. Further, a computer-readable storage medium qualifies as

an article of manufacture, which is expressly recognized as patentable subject matter under 35 U.S.C. § 101.

Consequently, it is respectfully submitted that each of Claims 20-29, 42, 43, 46-49, 61, 64, and 67 is directed towards statutory subject matter, and the rejection made under 35 U.S.C. § 101 is respectfully requested to be withdrawn.

B. 35 U.S.C. § 112(1)

Claims 60-68 stand rejected under 35 U.S.C. § 112(1) as allegedly containing subject matter that is not supported in the specification.

Claims 60-62 each feature that "when the power state of the first network device is the unpowered state, the first network device is not able to receive one or more packets over the network" and "when the power state of the first network device is the powered state, the first network device is able to receive one or more packets over the network."

In reference to Claims 60-68, the Final Office Action stated, "The claim(s) contains subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention." However, MPEP § 2163.05 states that "each claim limitation must be expressly, **implicitly, or inherently** supported in the originally filed disclosure" (emphasis added).

It is respectfully submitted that Claims 60-62 are at least implicitly or inherently fully supported by applicant's specification, and no new matter is included. For example, the specification uses the terms "unpowered" and "powered," and both terms are distinguished from other terms, such as "standby" and "active" as well as "on" and "off." Furthermore, the

term "unpowered" on its face means having "a lack of power," while "powered" means having "power."

In the context of network devices, one of ordinary skill in the art would understand that a network device in the "unpowered" state would mean that the network device is not able to receive network traffic in the form of packets in a packet-based network such as the worldwide packet-based network known as the Internet. (specification, page 32, lines 5-6.) Conversely, one of ordinary skill in the art would understand that a network device in the "powered" state would mean that the network device is able to receive network traffic in the form of packets in a packet-based network such as the Internet.

The Final Office Action's rejections are based on *Schenkel's* disclosure of sending of a signal in the form of a burst of packets (or sequential bursts of packets) from a source device to a destination device, which the Final Office Action alleges is the same as changing the power state of a device from unpowered to powered. However, as defined in Claims 60-62, "the first network device being in the unpowered state means that the first network device is not able to receive one or more packets over the network." Thus, in the approach of Claims 60-62, the first network device cannot change from the unpowered state to the powered state based on sending a signal of a burst of packets because, by definition, the first device being unpowered means that the first device cannot receive packets. Thus, because Claims 60-62 directly contradict the approach of *Schenkel*, the Applicant respectfully submits that Claims 60-62 are allowable and are in condition for allowance.

Claims 63-65 each feature "when the particular network device is not supplied with power, the particular network device is not able to receive one or more packets over the network" and "when the particular network device is supplied with power, the particular network device is able to receive one or more packets over the network," which is similar to

Claims 60-62. Likewise, Claims 66-68 each feature "when the power state of the first network device is unpowered, the first network device is not able to receive one or more packets over the network" and "when the power state of the first network device is powered, the first network device is able to receive one or more packets over the network," which is also similar to Claims 60-62. Therefore, it is respectfully submitted that Claims 63-65 and 66-68 are each allowable for the same reasons as given above for Claims 60-62.

Reconsideration and withdrawal of the rejection of Claims 60-68 under 35 U.S.C. § 112(1) is therefore respectfully submitted.

C. 35 U.S.C. § 103

Claims 1-3, 5-8, 12, 14, 20-24, 27, 31-35, 38, 42-43, 48, 50-51, and 56 have been rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over U.S. Patent Number 6,728,670 issued to Schenkel et al. ("*Schenkel*") in view of U.S. Patent Number 6,516,345 issued to Kracht ("*Kracht*"). This rejection is respectfully traversed.

Claims 4, 11, 15, 46, 49, 54, and 57 have been rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over *Schenkel* in view of *Kracht* and in further view of U.S. Patent Number 6,628,623 issued to Noy ("*Noy*"). This rejection is respectfully traversed.

Claims 13, 25-26, 28, 36-37, 39, 47, 55, and 58-59 have been rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over *Schenkel* in view of *Kracht* and in further view of U.S. Patent Number 5,347,167 issued to Singh ("*Singh*"). This rejection is respectfully traversed.

Claims 16, 29, and 40 have been rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over *Schenkel* in view of *Kracht* and in further view of U.S. Patent Number 6,507,273 issued to Chang et al. ("*Chang*"). This rejection is respectfully traversed.

II. THE REJECTIONS BASED ON THE PRIOR ART

It is respectfully submitted that the Examiner has erred in rejecting Claims 1-8, 11-16, 20-29, 31-40, 42-43, 46-51, and 54-68 under 35 U.S.C. §103(a).

A. CLAIMS 1-3, 5-8, 12, 14, 20-24, 27, 31-35, 38, 42-43, 48, 50-51, AND 56

Claims 1-3, 5-8, 12, 14, 20-24, 27, 31-35, 38, 42-43, 48, 50-51, and 56 have been rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over *Schenkel* in view of *Kracht*.

1. Claim 1

Claim 1 features:

> "A method for determining one or more logical interconnections among a plurality of network devices that are interconnected in a network in an indefinite relationship, wherein a power state is associated with a first network device, the method comprising the computer-implemented steps of:
>
> **changing the power state** of the first network device **from either (a) an *unpowered* state to a *powered* state or (b) from the *powered* state to the *unpowered* state**;
>
> **identifying whether an alteration occurs *at a second network* device in response to changing the power state *of the first network device***; and
>
> when the alteration occurs at the second network device, creating and storing first information representing a logical connection of the first network device to the second network device." (Emphasis added.)

i) The Final Office Action's Citations From *Schenkel*

The Final Office Action states that *Schenkel* discloses "changing the power state of the first network device from either (a) an unpowered state to a powered state or (b) from the powered state to the unpowered state; identifying whether an alteration occurs at a second network device in response to changing the power state of the first network device (column 2,

lines 20-40; shows a signal sent from a source device to a destination device, Figure 2, and column 3, lines 18-32.)" This is incorrect.

The first cited portion from column 2 of *Schenkel* describes measuring the traffic output of one device (e.g., the sequence of bursts of packets formed of orthogonal signals), measuring the traffic input of another device, and determining connections between devices or a sequence of connections between devices based on whether the measured traffic between the two devices is statistically the same or not. (Col. 2, lines 20-40.) The last cited portion from column 3 of *Schenkel* describe a series of four devices, A through D, connected in series in which the output of one device is the input to the next device, as illustrated in Figure 2. (Col. 3, lines 18-32; Figure 2.) Thus, the cited portions of *Schenkel* describe sending traffic from the source device to a destination device and comparing the traffic sent from the source device to the destination device. If the traffic is statistically the same, *Schenkel's* approach is to conclude that the source device is connected to the destination device, otherwise if the traffic is not statistically the same, the source device is not connected to the destination device.

The "Response to Arguments" section of the Final Office Action also cites additional portions of *Schenkel* – namely the Abstract, col. 2, lines 11-12; col. 1, line 65 – col. 2, line 2; col. 22, line 60 – col. 23, line 15; and col. 19, lines 10-67. However, the cited portion of column 19 of *Schenkel* describes and defines an "idle" device as a device in which the "traffic in or out of it is insignificant…Idleness can be expressed as having a mean level of traffic below some cutoff to be chosen by the operator." (Col. 19, lines 34-36 and 41-42.) Thus, because *Schenkel's* device is receiving traffic, the device must be powered, and when receiving more traffic so that the device is no longer idle, the device remains powered.

As described below, none of these portions of *Schenkel* describe either "**changing the power state** of the first network device from either (a) an ***unpowered state*** to a ***powered state***

or (b) from the ***powered state*** to the ***unpowered state***" or "identifying whether an alteration occurs at a second network device in response to changing the power state of the first network device" because (1) the sending of packets from a source device to a destination device in *Schenkel* does not change the power state of the destination device, and (2) even if it did, any alteration occurs at the destination device, not the source device. These two arguments are fully outlined in the following sections.

It is respectfully noted that the Examiner explained during the telephone interview conducted on December 15, 2005 that a cited reference must be read as a whole, and therefore that the Applicant should not solely focus on the portions cited from *Schenkel*. The Applicant has reviewed not just the cited portions of *Schenkel*, but the entirety of *Schenkel*, yet the Applicant has failed to find anything that supports the rejections in the Final Office Action.

Furthermore, according to the MPEP, "the particular part relied on [in an Office Action] must be designated as nearly as practicable ... The pertinence of each reference, if not apparent, must be clearly explained ..." (MPEP §707, citing 37 C.F.R. §1.104(c)(2)), and "the particular figure(s) of the drawings(s), and/or page(s) or paragraph(s) of the reference(s), and/or any relevant comments briefly stated should be included." (MPEP § 707). Thus, the Applicant respectfully requests that if the Examiner believes other portions of *Schenkel* not cited in the Final Office Action disclose the features of the claims that the Applicant has been unable to locate, that the Examiner provide citations to those portions of *Schenkel* along with an explanation as to why the Examiner believes the disclosure in those portions of *Schenkel* disclose the features of the claims.

ii) *Schenkel* Fails to Show Changing the **Power State** of a **First** Network Device and Identifying an **Alteration** at a **Second** Network Device

As discussed during the telephone interview with the Examiner, the Applicant is unclear about which portions of *Schenkel* are being relied upon as showing the following features of Claim 1: (a) "the first network device", (b) "the second network device", (c) "the power state of the first network device," (d) "the alteration occurs at the second network device." The Applicant's attempts at matching the devices and discussion of *Schenkel* to the first two features of Claim 1 (e.g., the first and second network devices) results in inconsistencies with two other features of Claim 1 (e.g., the power state and the alteration).

It initially appears that the Final Office Action is equating the "destination device" and "source device" of *Schenkel* to the "first network device" and "second network device," respectively (e.g., items (a) and (b) above), of Claim 1 because the Final Office Action says that the "signal bursts are sent to the destination device until no longer idle, which is a change of the power state." Assuming for the moment that sending the signal bursts is a change of power state, this matching of *Schenkel's* devices to those of Claim 1 is consistent with feature (c) above because the first network device (e.g., the destination device) has its power state being changed. However, this is inconsistent with feature (d) above of "identifying whether an alteration occurs at the second network device" because that would mean an alteration occurs at the source device in *Schenkel* that sends the signal bursts (or some other device not described).

Furthermore, in *Schenkel's* approach, the link between the source device and destination device is determined by a statistical comparison of the traffic at the destination device and the source device. Thus, a change that occurs, if a change does occur at all, is at the destination device, not the source device, which is the same device at which the power state changes. Yet in the approach of Claim 1, in response to the change in the power state of the first network

device, an alteration occurs at the second network device. Thus, the Applicant respectfully submits that based on this first application of the elements disclosed in *Schenkel* to the features of Claim 1, *Schenkel* fails to disclose "identifying whether an alteration occurs at the second network device in response to changing the power state of the first network device."

Alternatively, if the source and destination device are reversed such that the "first network device" of Claim 1 is the "source device" of *Schenkel* and the "second network device" of Claim 1 is the "destination device" in *Schenkel*, then that would be consistent with feature (d) above in that an alteration is identified at the destination device (e.g., the change, if any, in the packets that are sent to the destination device). However, this is inconsistent with feature (c) above of "the power state of the first network device" because that would mean that the power state of the source device is changed. However, in *Schenkel's* approach, it is the power state of the destination device that is allegedly changed by sending the signal burst of packets, not the source device. Thus, the Applicant respectfully submits that based on this second application of the elements disclosed in *Schenkel* to the features of Claim 1, *Schenkel* fails to disclose "changing the power state of the first network device from either (a) an unpowered state to a powered state or (b) from the powered state to the unpowered state."

To summarize, regardless of how the source and destination devices of *Schenkel* are matched against the first and second network devices of Claim 1, *Schenkel* always has **both** the change in power state **and** the alteration at the destination device, yet in Claim 1, the change in power state and the alteration occur at ***different*** network devices, namely the first and second network devices.

iii) *Schenkel* Identifies Connected Devices When the Traffic is the Same, Whereas Claim 1 Identifies Connected Devices When an Alteration Occurs

The link between the source and destination devices in *Schenkel* is only determined if the traffic is statistically the same, and if the traffic is not statistically the same, then there is no link between the source and destination devices. But when the traffic is the same, then **there is no alteration** (or difference) in the traffic between the two devices in *Schenkel*. Only if the traffic is ***not*** **statistically the same** is there not a link determined between the source and destination devices. In other words, *Schenkel's* approach only identifies that two devices are connected if there is **no** difference in the traffic, but if the traffic *is different*, then there is **no** link.

Yet the approach of Claim 1 is the opposite of that of *Schenkel*. Specially, Claim 1 expressly features that the logical connection is created and stored when there is a difference, i.e., when an alteration ***does occur*** at the second device. But if this situation occurs with *Schenkel's* approach, the opposite conclusion is reached, namely that the source and destination devices are ***not*** connected.

iv) *Schenkel's* "**Idle**" Device is Not an "**Unpowered**" Device

Contrary to the assertions of the Final Office Action, the mere sending of a signal comprised of a sequence of packet bursts is not the same as "changing the power state of the first network device **from either (a) an *unpowered* state to a *powered* state or (b) from the *powered* state to the *unpowered* state**" as in Claim 1. In *Schenkel*, the sending of packet bursts does not change the power state of the sending device, the receiving device, or any other device, which is a fundamental difference between *Schenkel* and the approach of Claim 1. In fact, some changes to the power state of a sending device, such as from powered to unpowered,

would render the approach of *Schenkel* inoperative because the sending device would be incapable of sending the signal. Even other power state changes, such as by turning a device from unpowered to powered, would not result in sending the sequence of bursts of packets as disclosed in *Schenkel*.

In the "Response to Arguments" section, the Final Office Action states that the "idled device in Schenkel **can be taken as being an unpowered device**, since the idled device **does not have enough traffic activity to be considered an active device** on the network. The device is then stimulated using signal burst to an active state to allow the device's connections to be identified directly" (page 3, Argument B; emphasis added).

The Applicant respectfully disagrees that sending signal bursts to an idle device until the device is no longer idle is a change of the power state, based on the definition of an "idle" device and "idleness" as provided in *Schenkel*. Specifically, *Schenkel* states:

> Stimulation of idle devices in a network allow their connections to be identified directly. The present invention can determine that a device is **idle** ***because the volume of traffic in or out of it is*** **insignificant**. It can then instruct a signal burst to be sent to or across this device in order to generate ***enough traffic*** to accurately locate it in the network…***Idleness*** can be expressed as having ***a mean level of traffic below some*** **cutoff** to be chosen by the operator. A convenient value of this cutoff is 5 units of activity per sampling period as this provides the classic chi-squared formulation with sufficient data for its basic assumptions to be reasonable accurate. (Col. 19, lines 33-46; emphasis added.)

Therefore, ***Schenkel*** **clearly defines an idle device as a device for which the traffic is not zero, but** ***merely insignificant***, meaning that the traffic through the device is below a cutoff value does not allow for accurate identification of the network connections. The use of a signal burst to increase the traffic for an idle device so that the device can be located indicates that the device is already in a "powered" power state (e.g., the device is "on"). The sending of the signal burst does not change the power state from unpowered to powered or from off to on (or vice versa). Rather, the signal burst supplies sufficient traffic so that the statistical comparison

of the traffic sent to the traffic received is meaningful. Because the basis for *Schenkel's* connection identification approach is a statistical method, sufficient traffic must be used in order to make a statistically meaningful comparison between the traffic sent and the traffic received, and therefore conclude that the sending device and the receiving device are connected.

Thus, **an "*idle*" device as defined in *Schenkel* is a device that is in the "*powered*" power state (or "on"),** as opposed to an "unpowered" power state (or "off"). Changing the status of the device in *Schenkel* from "idle" to "not idle" merely means that there is sufficient traffic through or to the device for a statistically meaningful comparison of traffic sent versus traffic received, but the power state of the device remains unchanged in the powered or "on" power state. **If the initial power state of an idle device were unpowered or off, then the device would be unable to receive the signal burst in *Schenkel*'s approach.**

In contrast to *Schenkel*, Claim 1 features "changing the power state of the first network device **from either (a) an *unpowered* state to a *powered* state or (b) from the *powered* state to the *unpowered* state**." Neither the cited portions of *Schenkel* or any other portion of *Schenkel* discloses anything about changing the power state from "an unpowered state to a powered state" as featured in Claim 1, because *Schenkel's* technique of changing the status of an "idle" device, that is already powered but merely has too little traffic to accurately use *Schenkel's* statistics-based connection identification approach, by sending a signal burst merely increases the traffic to the device still leaves the device in a powered power state. Furthermore, there is nothing in either the cited portions of *Schenkel* or any other portion of *Schenkel* about changing the power state from "the powered state to the unpowered state," as featured in Claim 1. Indeed, *Schenkel* does not even mention the terms "power" or "state."

v) The Final Office Action Improperly Relies on Reading into Claim 1 a Definition of a Term Not Used in Claim 1

During the Interview and in the Response to Arguments section of the Final Office Action, the Examiner explained that the Examiner was relying upon the definition of "unpowered" from page 10 the specification. However, the definition provided therein is **not** of the term "unpowered" but rather of the term "power cycling." Specifically, the specification states:

> Next, the power state of a device is changed, as indicated in block 220. For example, in FIG. 1, the initial power state of CPU 130 may be unpowered (or "off"), but then power is supplied to CPU 130 (e.g.,. CPU 130 is turned on). The changing of a power state may be referred to as "**power cycling**." However, **that term** is used herein in a broader sense to also include turning off a network device or even to change the power state of a network device from standby to active. (Application, page 10, lines 20-25; emphasis added.)

Note that in this portion of the Application, the term "power cycling" encompasses three types of power state changes: (1) from unpowered to powered, such as going from not being supplied with power to being supplied with power; (2) from "off" to "on;", and (3) from standby to active. This is consistent with other portions of the Application. For example, the Application describes "power cycling" as follows:

> The "**power cycling**" of a network device means that the power state of the network device is changed or altered from what the power state was immediately prior to the power cycling action. The power state of a network device before **power cycling** may simply be ***"off," unpowered, or inactive***, or ***"on," powered, or active***. The power state of a network device may also be any other power characteristic of the network device. For example, the power state may be a form of power conservation mode, such as a ***power saving or "sleep" state***, in which only minimal power is used by the network device. (Application, page 22, line 20 to page 23, line 2; emphasis added.)

The only place in the claims where the term "power cycling" is used is in Claims 16, 29, and 40 in which the term is expressly limited to one type of change of power state, namely "power cycling a first network device from either 'off' to 'on' or from 'on' to 'off'." The term

"power cycling" is not used in Claim 1 or in any of the other independent claims. Rather, Claim 1 expressly features "changing the power state of the first network device," and similar to Claims 16, 29, and 40, the type of change of power state is expressly limited by the words of Claim 1 to "from either (a) an unpowered state to a powered state or (b) from the powered state to the unpowered state." Thus, Claim 1 expressly excludes changing the power state from standby to active.

Furthermore, the Applicant respectfully disagrees with the Final Office Action's attempt to read into Claim 1 a definition of a term not used in Claim 1. If the Applicant wanted Claim 1 to recite the term "power cycling," the Applicant would have included the term in Claim 1 (just as the Applicant has included that term in Claim 16). Yet by expressly not using the term "power cycling" in Claim 1, the Applicant has expressly differentiated Claim 1 from the definition of the term "power cycling." In addition, the Applicant notes that while the specification defines the term "power cycling" as changing the power state of a device, the specification has not defined the concept of changing the power state in terms of the term "power cycling," and therefore the Applicant respectfully submits that it is not proper for the Final Office Action to do so.

The only way that the Applicant has been able to reconcile the Final Office Action's reliance on the definition of "power cycling" from page 10 of the Application would be to equate the term "standby" to "unpowered." Yet the two terms are clearly distinguished in the Application, as evidenced by the two passages provide above. Furthermore, on its face, the term "standby" would be understood by one of ordinary skill in the art to mean that a device in "standby" has power, and thus a change in power state from "standby" to "active" leaves the device in a "powered" power state.

While *Schenkel* discloses an approach for determining a network topology by sending a signal consisting of a sequence of bursts of packets and measuring such packet traffic at the output of a sending device and the input of a receiving device, including the stimulation of an "idle" device for which the traffic is too low to make an accurate statistical comparison, this does not relate to "changing the power state of the first network device **from either (a) an *unpowered* state to a *powered* state or (b) from the *powered* state to the *unpowered* state**" as featured in Claim 1 of the present application.

vi) Conclusion of Discussion of Claim 1

Because *Schenkel* fails to disclose, teach, suggest, or in any way render obvious either "changing the power state of the first network device from either (a) an unpowered state to a powered state or (b) from the powered state to the unpowered state" or "identifying whether an alteration occurs at the second network device in response to changing the power state of the first network device," the Applicant respectfully submits that, for at least the reasons stated above, Claim 1 is allowable over *Schenkel* and is in condition for allowance.

2. Claims 20 and 31

Claims 20 and 31contain features that are either the same as or similar to those described above with respect to Claim 1. For example, Claims 20 and 31 both feature "changing the power state of the first network device **from either (a) an *unpowered* state to a *powered* state or (b) from the *powered* state to the *unpowered* state**," which is the same as in Claim 1.

Therefore, based on at least the reasons stated above with respect to Claim 1, the Applicant respectfully submits that Claims 20 and 31 are allowable over the art of record and are in condition for allowance.

3. Claims 6, 27, and 38

Regarding Claims 6, 27, and 38, the Final Office Action states that Claim 6 "contains similar limitations as claim 1; therefore, it is rejected under the same rationale." However, Claims 6, 27, and 38 **include numerous additional features not found within Claim 1**. For example, the first step of Claims 6, 27, and 38 is "(1) establishing connections among a plurality of devices based upon a set of rules," yet Claim 1 lacks anything similar to this step of establishing connections, little less that those connections are established based upon a set of rules.

Also, Claim 6 features "(5) repeating steps (2), (3), and (4) for each of said set of specified network devices," and therefore, the steps of "activating," "identifying," and "creating and storing" are performed at least two times. Yet in Claim 1, the steps of "changing," "identifying," and "creating and storing" are performed for just a first network device and a second network device.

The Applicant has been unable to identify any features of the cited art that correspond to these additional features of Claims 6, 27, and 38. Therefore, the Applicant respectfully submits that Claims 6, 27, and 38 are allowable over the cited art and are in condition for allowance.

4. Claim 12

Regarding Claim 12, the Final Office Action states that Claim 12 "contains similar limitations as claim 1 above, therefore are rejected under the same rationale." However, Claim 12 **includes numerous features that are not found in Claim 1**. For example, Claim 12 features "sending a signal from a control device that results in a change in a power state of a first network device," yet Claim 1 lacks anything similar to a control device sending a signal.

Also, in Claim 12, there are three devices: the control device, the first network device, and the second network device. It is the control device that causes the change in the power

state of the first network device as a result of sending the signal, yet in Claim 1, there is no feature about how the power state of the first network device is changed.

While *Schenkel* describes the sending of a burst of packets, which the Final Office Action may be relying upon as corresponding to the signal sent in Claim 12, the signals in *Schenkel* are sent from the source device to the destination device to determine if the two devices are connected, and thus *Schenkel* only involves two devices and the signal that allegedly causes the change in power state is sent from one of the devices between which there may be a connection. However, in Claim 12, there are **three devices**, and the signal from the control device causes the power state to change at the first network device, and then an alteration is identified at a second network device to determine if the first and second network devices are connected. Thus, in the approach of Claim 12, the signal is ***not*** sent from one of the two network devices that may be interconnected, which is different than in *Schenkel*.

Furthermore, in order for the control device to send the signal to the first network device, there must be a known connection between the control device and the first network device, which is not the case in *Schenkel* in which the source device sends the burst of packets to the destination device in order to determine if the source device is connected to the destination device. Therefore, the Applicant respectfully submits that Claim 12 is allowable over the cited art and are in condition for allowance.

5. Claims 2-3, 5, 7-8, 14-15, 21-24, 32-35, 42-43, 48, 50-51 and 56

Claims 2-3 and 5 are dependent upon Claim 1, Claims 7-8 are dependent upon Claim 6, Claims 14-15 are dependent upon Claim 12, Claims 21-24 are dependent upon Claim 20, Claims 32-35 are dependent upon Claim 31, Claims 42-43 are dependent upon Claim 27, Claim 48 is dependent upon Claim 28, Claims 50-51 are dependent upon Claim 38, and Claim 56 is dependent upon Claim 39.

Thus, each of Claims 2-3, 5, 7-8, 14-15, 21-24, 32-35, 42-43, 48, 50-51 and 56 include each and every feature of the corresponding independent claims. Therefore, the Applicant respectfully submits that each of Claims 2-3, 5, 7-8, 14-15, 21-24, 32-35, 42-43, 48, 50-51 and 56 is therefore allowable for the reasons given above for the Claims 1, 6, 12, 20, 31, 27-28, and 38-39. In addition, each of Claims 2-3, 5, 7-8, 14-15, 21-24, 32-35, 42-43, 48, 50-51 and 56 introduces one or more additional limitations that independently render it patentable. Some of these additional features of the dependent claims are addressed below, while a full discussion of each dependent claim is not included herein at this time based on the fundamental differences already identified herein.

i) Claims 3, 22, and 33

Claims 3, 22, and 33 each features "determining whether a state of a port of the terminal server is changed from dead to active in response to changing the power state of the first network device." As a preliminary matter, there appears to be a typographical omission in the citations for Claims 3, 22, and 33 in the Final Office Action that begins by referring to "column 30 –37" since it is unclear what column and line numbers are being referred to.

The Final Office Action cites Col. 2, line 65 – Col. 3, line 7, of *Schenkel* as disclosing a terminal server, yet the Applicant does not see a terminal server listed or described. The word "terminal" does not even appear in that passage, and the only occurrence of the word "server" is in referring to "file servers," which clearly are not terminal servers. An electronic search of *Schenkel* has failed to find any other reference to a "terminal server," nor has the Applicant been able to find any other type of device within *Schenkel* that functions as a terminal server.

Next, while Col. 6, lines 30-35, lines 55-56, and Col. 27, lines 55-62, of *Schenkel* all refer to a "port," there is nothing in those cited portions or any other that the Applicant has

found about the port being part of a terminal server. Furthermore, there is nothing in those cited portions of *Schenkel* about the state of the port changing from dead to active as in Claims 3, 22, and 33, little less that such a change in state is in response to changing the power state of the first network device, as in Claim 1. While the last citation refers to "port level of activity," it is in the context of receiving a burst, which means non-zero activity, and thus does not disclose anything about the port being dead.

Because *Schenkel* fails to disclose, teach, suggest, or in any way render obvious either "determining whether a state of a port of the terminal server is changed from dead to active in response to changing the power state of the first network device," the Applicant respectfully submits that, for at least the reasons stated above, Claims 3, 22, and 33 is allowable over *Schenkel* and are in condition for allowance.

B. CLAIMS 4, 11, 15, 46, 49, 54, AND 57

Claims 4, 11, 15, 46, 49, 54, and 57 have been rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over *Schenkel* in view of *Kracht* and in further view of *Noy*.

Claim 4 is dependent upon Claim 1, Claim 11 is dependent upon Claim 6, Claim 15 is dependent upon Claim 12, Claim 46 is dependent upon Claim 27, Claim 49 is dependent upon Claim 28, Claim 54 is dependent upon Claim 38, and Claim 57 is dependent upon Claim 39.

Thus, each of Claims 4, 11, 15, 46, 49, 54, and 57 include each and every feature of the corresponding independent claims. Therefore, the Applicant respectfully submits that each of Claims 4, 11, 15, 46, 49, 54, and 57 is therefore allowable for the reasons given above for the Claims 1, 6, 12, 27-28, and 38-39. In addition, each of Claims 4, 11, 15, 46, 49, 54, and 57 introduces one or more additional limitations that independently render it patentable. Some of these additional features of the dependent claims are addressed below, while a full discussion of

each dependent claim is not included herein at this time based on the fundamental differences already identified herein.

C. CLAIMS 13, 25-26, 28, 36-37, 39, 47, 55, AND 58-59

Claims 13, 25-26, 28, 36-37, 39, 47, 55, and 58-59 have been rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over *Schenkel* in view of *Kracht* and in further view of *Singh*.

Claims 58-59 are dependent upon Claim 1, Claim 13 is dependent upon Claim 12, Claims 25-26 are dependent upon Claim 20, Claims 36-37 are dependent upon Claim 31, Claim 47 is dependent upon Claim 28, and Claim 55 is dependent upon Claim 39.

Claim 28 is an independent computer-readable medium claim that recites the features of Claim 12 that render Claim 12 patentable over *Schenkel* and *Kracht*, as discussed previously.

Claim 39 is an independent apparatus claim that recites the features of Claim 12 that render Claim 12 patentable over *Schenkel* and *Kracht*.

Thus, each of Claims 13, 25-26, 28, 36-37, 39, 47, 55, and 58-59 include each and every feature of the corresponding independent claims. Therefore, the Applicant respectfully submits that each of Claims 13, 25-26, 28, 36-37, 39, 47, 55, and 58-59 is therefore allowable for the reasons given above for Claims 1, 12, 20, and 31. In addition, each of Claims 13, 25-26, 36-37, 47, 55, and 58-59 introduces one or more additional limitations that independently render it patentable. Some of these additional features of the dependent claims are addressed below, while a full discussion of each dependent claim is not included herein at this time based on the fundamental differences already identified herein.

1. Claims 13, 47, and 55

Claims 13, 47, and 55 each features the use of a "power controller that changes the power state of the first network device from unpowered to powered." The Final Office Action cites *Singh* as disclosing a power controller that "powers up connected computers and other peripheral devices," which the Applicant does not presently dispute. The Office Action then states that the motivation to combine *Schenkel* and *Kracht* with *Singh* is that "Singh's use of a power controller in Schenkel et al-Kracht's system would allow for discovery of devices by using a power controller to power up the first device and all other devices attached to the first device and then creating and storing information regarding the devices that are powered up due to the power controller." Yet the Final Office Action continues to rely on the previously discussed portions of *Schenkel* above as disclosing all the features of Claims 12, 28, and 39 from which Claims 13, 47, and 55 depend, respectively.

However, in *Schenkel's* approach, the determination of connections between devices is based on a statistical comparison of the traffic of the signal bursts between source and destination devices, which is independent of a power controller changing the power state of the first network device from unpowered to powered as in Claims 13, 47, and 55. Thus, it is not clear to the Applicant how the use of *Singh's* power controller can be incorporated into the approach of *Schenkel* without changing the principal of operation used by *Schenkel* to determine connections (e.g., the statistical comparison of network traffic).

Furthermore, according to MPEP §2143.01(VI), if the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious. Even if the approach of *Schenkel* were modified to include the power controller of *Singh*, the use of a power controller would have no role in the connection detection

approach of *Schenkel* unless the approach of *Schenkel* were modified to detect network connections based solely on powering on or off a device. But such a modification of the approach of *Schenkel* would change the principal of *Schenkel's* operation from a statistical comparison of network traffic sent from a source device to a destination device to merely detecting whether a connection is powered or not powered. Thus, in this situation, since the principle of *Schenkel's* operation is changed, *Schenkel* cannot properly be combined with *Singh* according to MPEP §2143.01(VI).

Finally, the Final Office Action's motivation to combine *Schenkel* and *Kracht* with *Singh* is that "Singh's use of a power controller in Schenkel et al-Kracht's system would allow for discovery of devices by using a power controller to power up the first device and all other devices attached to the first device and then creating and storing information regarding the devices that are powered up due to the power controller." However, the Applicant respectfully submits that there is nothing in any of *Schenkel*, *Kracht*, or *Singh* that teaches or suggests combining their respective teachings.

As stated in the Federal Circuit decision *In re Dembiczak*, 50 USPQ.2d 1617 (Fed. Cir. 1999):

> "We have noted that evidence of a suggestion, teaching, or motivation to combine may flow from the prior art references themselves, the knowledge of one of ordinary skill in the art, or, in some cases, from the nature of the problem to be solved...although 'the suggestion more often comes from the teachings of the pertinent references'...The range of sources available, however, ***does*** **not** ***diminish the requirement for actual evidence***. That is, the ***showing*** **must be** ***clear and particular***...Broad conclusory statements regarding the teaching of multiple references, standing alone, are not 'evidence.'" *Id.* (emphasis added; internal citations omitted).

Schenkel, *Kracht*, or *Singh* lack any suggestion, teaching, or motivation to combine their teachings. The Final Office Action lacks a "clear and particular" showing of the suggestion, teaching, or motivation to combine their teachings. In fact, the only motivation provided in the

Final Office Action is the hindsight observation that by combining features of those references, one may achieve the benefits achieved from the invention as described and claimed in the application. It is respectfully submitted that such a hindsight observation is not consistent with the Federal Circuit's requirement for "particular factual findings."

Therefore, because neither *Schenkel* nor *Singh*, either alone or in combination, disclose, teach, suggest, or in any way render obvious the combination of the use of a "power controller that changes the power state of the first network device from unpowered to powered" and "identifying whether an alteration occurs at the second network device in response to changing the power state of the first network device," the Applicant respectfully submits that, for at least the reasons stated above, Claims 13, 47, and 55 is allowable over *Schenkel* and are in condition for allowance.

Furthermore, because the combination of *Schenkel* and *Singh* would change the principle of operation of the approach of *Schenkel*, the Applicant respectfully submits that *Singh* cannot be properly combined with *Schenkel* and *Kracht,* per MPEP §2143.01(VI). Finally, because the only motivation provided in the Final Office Action is the hindsight observation that by combining features of those references, one may achieve the benefits achieved from the invention as described and claimed in the application, the Applicant respectfully submits that *Singh* cannot be properly combined with *Schenkel* and *Kracht* due to the lack of any "particular factual findings" as required by the Federal Circuit.

D. CLAIMS 16, 29, AND 40

Claims 16, 29, and 40 have been rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over *Schenkel* in view of *Kracht* and in further view of *Chang*.

Each of Claims 16, 29, and 40 also feature "power cycling a first network device from either "off" to "on" or from "on" to "off"." The Final Office action rejects the "power cycling" portion of this step on *Schenkel* and the off to on/on to off portion based on *Chang*. The Applicant does not presently dispute that *Chang* shows a remotely controlled power switch.

However, the Applicant fails to see how *Chang* can be incorporated into *Schenkel's* approach that is based on sending signal bursts and comparing network traffic between a source and destination device. If the device were turned from "on" to "off", then no signal bursts could be sent or received. If the device were turned from "off" to "on", then there is nothing about how that type of action would result in the signal bursts being sent as described in *Schenkel* and the subsequent statistical comparison of the network traffic to indicate whether a connection exists or not as taught by *Schenkel*. Rather, in the approach of *Schenkel*, some other positive action is required to initial the bursts of packets other than merely turning a device from "off" to "on," and prior to the sending of those signal bursts and subsequent statistical comparison of the traffic, *Schenkel* assumes that the source and destination devices are already both "on" or "powered."

Because neither *Chang* nor *Schenkel* describe how the mere powering on or off of a device as described in *Chang* can result in the determination of whether devices are connected as taught in *Schenkel*, the Applicant respectfully submits that Claims 12, 28, and 39 are allowable over the cited art and are in condition for allowance.

Therefore, based on at least the reasons stated above with respect to Claim 1, the Applicant respectfully submits that Claims 16, 29 and 40 are allowable over the art of record and are in condition for allowance.

III. CONCLUSION

For the reasons set forth above, it is respectfully submitted that all of the pending claims are now in condition for allowance. Therefore, the issuance of a formal Notice of Allowance is believed next in order, and that action is most earnestly solicited.

The Examiner is respectfully requested to contact the undersigned by telephone if it is believed that such contact would further the examination of the present application.

Please charge any shortages or credit any overages to Deposit Account No. 50-1302.

Respectfully submitted,

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